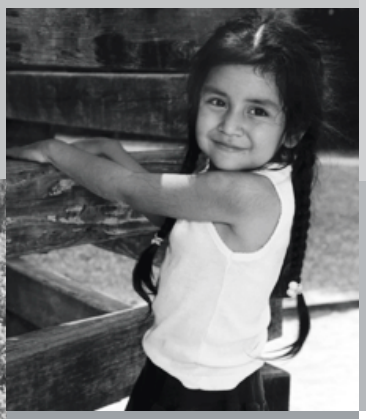

Protecting people

Safety is the key to every law we enforce, every program we administer.

Emphasizing enforcement

The intent of pesticide laws and the regulatory policies that implement them is to protect people and the environment from the harmful effects of pesticides. However, without strong enforcement, laws and policies are just paper tigers. Action is what counts. In 2003 and 2004, DPR took steps to ensure strong enforcement at both the state and county levels.

The County Agricultural Commissioners (CACs) are the primary enforcement arm of the pesticide program, overseeing local pesticide use. In 2003, DPR and the counties adopted a new annual work planning and performance review process, including specific measurements that relate to public health, occupational safety, and environmental quality. For example, drift incident reduction and fumigant application inspections were designated high priorities for local enforcement in the 2003-2004 evaluation period.

DPR and county staff do joint inspections to help ensure that compliance and enforcement activities are conducted efficiently and effectively throughout the State. In addition to these oversight inspections, and inspections that county staff perform independently, DPR field staff also inspect hundreds of worksites to assess compliance with worker protection requirements. In 2001, DPR completed an audit of industry compliance in 20 counties to evaluate the performance of growers, applicators, and other pesticide users in meeting worker protection requirements. In counties where industry compliance fell below 80 percent, the CACs developed and implemented work plans to improve oversight. DPR continues to assess industry performance in coordination with the Commissioners, using the information to target improvement efforts statewide.

The Commissioners have long had authority to levy administrative civil penalties for pesticide violations. The Legislature in 2002 increased the maximum penalty from $1,000 to $5,000 for serious violations. In 2004, DPR put into place regulations that provide guidance to Commissioners on when the increased fines should be imposed.

To assist the CACs, DPR developed and distributed several enforcement aids, including a "regulatory toolbox" – a four-page quick reference that gives inspectors the range of enforcement options at their disposal. We packaged it with a summary of laws and regulations that can be cited in enforcement actions.

In December 2003, DPR issued formal guidance to help Commissioners improve investigations of pesticide episodes in which large numbers of people are made ill. The guidelines have already proven their worth in helping local authorities effectively identify potential victims and pursue investigations.

Restricting fumigants

Reducing the impact of fumigants in ambient air has been a major focus of DPR's scientific and regulatory efforts for a number of years. Because they are gaseous, fumigants are more likely to show up in ambient air than other pesticides. A high percentage of drift illnesses are caused by fumigants. Yet fumigants are also critical in controlling soil-borne pests.

Since 1992, DPR has been tightening controls on methyl bromide, prompted by health concerns for workers and others who live or work near application sites. This resulted in the nation's toughest methyl bromide controls, including buffer zones, limitations on worker hours, and limitations on acreage that can be treated in any single application – all designed to protect against short-term (acute) exposures.

DPR then evaluated seasonal exposures from multiple fumigations that occur over several weeks. In 2004, we implemented new regulations that put buffer zone distances and duration in law and require respiratory protection for workers in some circumstances. They also require DPR and County Agricultural Commissioners to use measures designed to ensure that air concentrations outside of buffer zones do not exceed an average of 9 ppb in any month. This may require imposing geographic caps on methyl bromide use or equivalent protective measures. Although methyl bromide applications have declined in California (as a result of DPR's restrictions and an impending international phaseout), some use is expected to continue for several years. Ensuring people are protected is DPR's overriding concern.

Scarcity of the methyl bromide supply has prompted growers to turn to other fumigants, including metam-sodium and chloropicrin. Both fumigants have been implicated in major drift incidents, adding urgency to DPR's efforts to craft restrictions designed to prevent such problems. We are working closely with U.S. EPA on control measures for metam-sodium and chemically related fumigants. U.S. EPA expects new rules in place by 2006. In the interim, many County Agricultural Commissioners have imposed stringent controls in areas where potential problems may occur.

At DPR's request, the State Air Resources Board monitored for chloropicrin and sulfuryl fluoride in 2003 and 2004. Methyl iodide is a proposed replacement for methyl bromide that has not yet been registered in the U.S. or California. We are conducting a methyl iodide risk assessment – before it can be registered in California – we will know what use restrictions are needed to protect workers and others who work or live near treated fields.

In April 2004, DPR began a study to measure air concentrations and estimate emission rates for various fumigants used individually and in combination. Our goals were to determine the effectiveness of current or proposed buffer zones, and

In the 2003-04 fiscal year, the County Agricultural Commissioners issued 35,995 permits (1,121 were denied), completed 36,648 inspections, issued 6,620 compliance actions and 975 penalty actions.

A highlight of the 2004 legislative session was the passage and signing of Senate Bill 391 (Florez). In signing the bill, Governor Schwarzenegger praised the measure for "ensuring the immediate medical treatment and timely payment for individuals injured by the improper application of agricultural pesticides." It squarely places the financial burden to pay for acute medical costs on those businesses that create the harm when they violate pesticide rules. SB 391 also increased the penalty authority for non-occupational incidents imposed at the local level. The provisions went into effect January 1, 2005.

to gather data on relative emission rates between fumigants. If we can establish a consistent relationship in relative emission rates, monitoring data for one fumigant may be used as surrogate data for another. Leveraging data can help DPR detect variations in emissions with soil type, cultural practices, or other factors that are not detectable with current data. This could provide more flexibility and buffer zone adjustment for local conditions than is now possible, allowing fumigant applications to be conducted while protecting workers and others near application sites.

Completing risk assessments

Risk assessment plays a critical role in DPR's evaluation of the potential hazards associated with pesticide exposure. Risk assessment is a process designed to answer questions about how toxic a chemical is, what exposure results from its various uses, what is the likelihood that use will cause harm, and how to characterize that risk. Our scientists do risk assessments under the umbrella of three legislative mandates: the Toxic Air Contaminant Act of 1983 (which focuses on pesticides in air), the Birth Defect Prevention Act of 1984 (which focuses on chronic as well as developmental and reproductive effects), and the Food Safety Act of 1989 (with a dietary focus). Risk assessment is often the driving force behind new regulations and other use restrictions.

Regardless of the impetus for initiating the risk assessment, DPR sets priorities for risk assessments through a single process. Setting priorities is critical to making the best use of staffing and other resources, and to ensure that DPR focuses on chemicals with the greatest potential risk. In 2004, DPR modified its priority-setting process to make it more consistent, understandable and transparent. We posted the draft policy on our Web site for comment and discussed it at an advisory committee meeting before finalizing it in mid-year.

DPR scientists take a comprehensive approach to risk assessment, and assess potential workplace, residential, ambient air, and dietary exposures. In 2003, our scientists revised the criteria they use for evaluating the exposure of pesticides in food. This was to better take advantage of new information from the residue monitoring and food consumption databases. Furthermore, a set of criteria was established for conducting probabilistic acute dietary exposure and risk analysis.

From July 2003 to June 2004, DPR scientists completed seven risk assessments: methyl parathion, methidathion, MITC, metam sodium, hydramethylnon, azinphosmethyl, and tribufos/DEF. In addition, six risk assessments were projected for completion by the end of 2004: chlorothalonil, propargite, endosulfan, propyzamide, sulfuryl fluoride, and methamidophos. By the end of 2004, DPR scientists had completed 123 risk assessments since the Department began conducting comprehensive risk assessments in the mid 1980s.

Scheduled for completion by mid-2005 are eight risk assessments: orthophenylphenol, acephate, imidacloprid, carbofuran, indoxacarb, mancozeb, paraquat, and cyfluthrin.

Finally, five risk assessments were initiated in 2004: carbaryl, chloropicrin, fipronil, methyl iodide, and simazine.

Evaluating toxic air contaminants: The air we breathe should not pose a health risk from pesticides. DPR is committed to using all its wide-ranging authority to prevent hazardous levels of pesticides in air. An important tool is the State's Toxic Air Contaminant (TAC) Program, which sets up a mechanism for DPR to evaluate airborne pesticide residues and, in cooperation with scientific reviewers, determine potential risks. If DPR identifies a pesticide as a TAC, the Department may consider use restrictions, in consultation with air districts and others.

In 2003, DPR completed the evaluation for methyl isothiocyanate (MITC) and designated MITC and other pesticides that generate MITC as TACs. In addition, DPR also administratively listed as TACs these pesticides classified by the U.S. EPA as hazardous air pollutants: oxybisphenoxyarsine, pesticides that generate carbon disulfide, and pesticides that generate phosphine. In 2004, DPR completed a draft risk assessment for sulfuryl fluoride. DPR is revising the evaluation based on public comments and will submit the document to the Scientific Review Panel for its consideration.

Reducing air pollution

Volatile organic compounds (VOCs) and nitrogen oxides react with sunlight to create ozone, a major air pollutant. Many active ingredients as well as inert ingredients in pesticide products are VOCs.

The federal Clean Air Act requires each state to have a plan for achieving and maintaining national standards for airborne pollutants such as ozone. Working with the ARB, DPR is responsible for developing and implementing VOC reduction measures for agricultural and commercially-applied structural pesticides. The goal is to reduce pesticidal VOC emissions in a way that minimizes disruption of management of agricultural and structural pests.

In the San Joaquin Valley, one of several regions in the state that have failed to meet required reduction goals, pesticidal VOCs form a significant percentage of total emissions. The San Joaquin Valley, and possibly other nonattainment areas, will not meet the air quality standard by the specified dates, even if pesticides achieve their reduction targets. In addition, U.S. EPA established a more stringent ozone standard in 2004. These conditions will likely require additional VOC reductions from pesticides.

Working with the ARB, DPR plans several actions to improve its estimate of the pesticide contribution to ozone and reduce pesticidal VOC emissions.

- In early 2005, DPR planned to place emulsifiable concentrate products into reevaluation, requiring manufacturers to reformulate these products to reduce VOC emissions, or face cancellation of registration. New products will not be registered without submittal of VOC emission potential data.
- DPR is assisting the ARB, the U.S. Department of Agriculture, and others in researching methods to reduce VOC emissions from pesticides and obtain more accurate estimates of pesticidal VOC emissions.
- DPR is evaluating regulatory options to reduce VOC emissions from pesticides.

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